

***Commercial Technologies for
Maintenance Activities (CTMA)***



The Commercial Technologies for Maintenance Activities (CTMA) Program

**Joint Technology Exchange Group
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NCMS Background

■ Established 1986

- Not-for-profit cooperative research corporation
- National Cooperative Research Act 1984

■ Mission

- Make manufacturers in North American more globally competitive
- Enhance national security

■ Industry driven

■ Initial funding

- National Machine Tool Builders Association (now AMT), DoD, State of Michigan

Who We Are ...a diverse array of industries



Electronics

Heavy Equipment

Controls



Computers



Machine Tools



Software



Health Care



Aircraft



Bearings



Hamilton Standard

A United Technologies Company



Aerospace

Automotive



Sensors



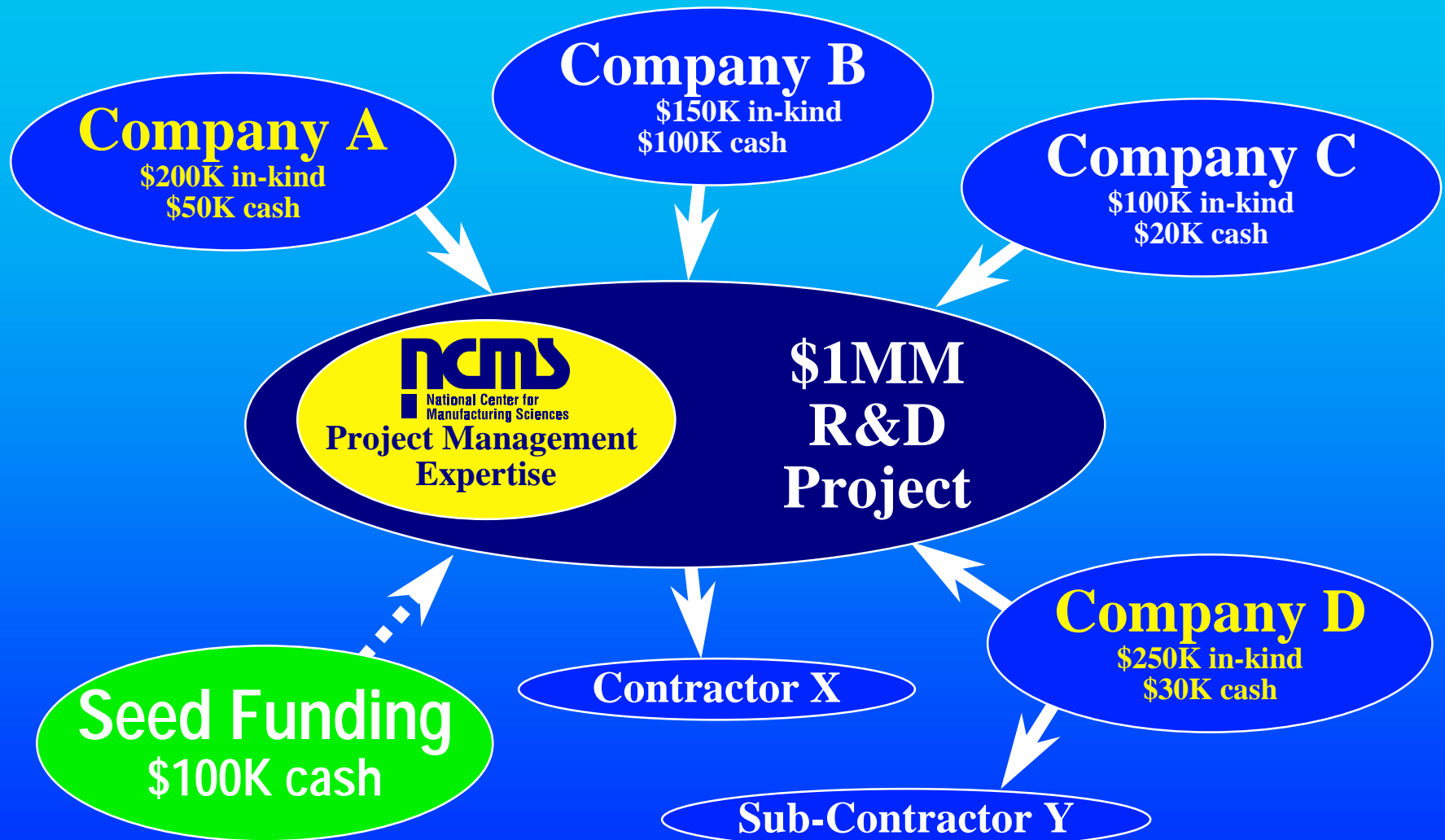
Communications



Who We Are:

- 35 people with impressive R&D collaboration skills ...
 - Technical/Engineering in a wide variety of disciplines
 - Finance/Accounting, including DoD Certified Systems
 - Information Access and Retrieval
 - Government Relations/Liaison
 - Communications/Design
 - Government and Private Sector Contracting
 - Information Systems Specialists
- Located in Ann Arbor, Michigan, and Washington, DC
- With NO laboratory facilities
- Have managed over \$1 Billion of Collaborative Manufacturing R&D Projects

What We Do: A Typical NCMS Project



CTMA Program Mission

- Identify, form, launch and deploy new projects coupling the needs and strengths of commercial industry with the DoD maintenance and repair facilities.
- Focus on reducing overall costs.

Why would Industry participate?

- DoD facilities offer base for technology demonstrations and piloting
- Leveraging of resources through collaboration
- Funding for high risk emerging technology solutions

CTMA Program Overview

- Cooperative Agreement between NCMS and the Office of the Secretary of Defense
- Administered by Office of Maintenance Programs, Resources and Planning
- Multi-year Funding Agreement
 - \$5 Million (1998)
 - \$6 Million (1999)
 - \$8 Million (2000)
 - \$8 Million? (2001)

CTMA Cooperative Agreement Highlights

- Funding for Direct Contract support to develop and demonstrate technologies
- Focus on cost reduction within DoD Organic Maintenance Activities (Depot Level)
- Requires a \$2 to \$1 Industry cost share on all technology development funding
- Provides for property disposition, IPR protection, and collaborative umbrella for all participants

CTMA Program Scorecard

- 20 Projects Approved by Office of the Secretary of Defense
 - ADUSD (L) is Program Administrator
- \$10.8 Million in Direct Contract Costs
- Over \$23 Million in Industry Cost Share Commitments
- 15 DoD Depot Level Maintenance Activities
- 72 Commercial Industrial Organizations

Who Participates (DoD facilities)

- *Tobyhanna AD*
- *Corpus Christi AD*
- Red River AD
- *Anniston AD*
- *Norfolk NSY*
- *Portsmouth NSY*
- Pearl Harbor NSY
- Puget Sound NSY
- *MC3 Albany*
- *MC3 Barstow*
- Davis-Monthan
- Aviation Classification Repair Depots
 - Groton, CT; Springfield, MO
- Pope AFB, NC
- Langley AFB, VA
- NADEP North Island
- *NADEP Jacksonville*
- *NADEP Cherry Point*
- *OC-ALC*
- *Ogden ALC*
- *WR-ALC*
- *Trident Kings Bay*
- *Camp Pendleton*
- *Philadelphia Foundry*
- Navy Spawar
- *DMEA*
- Ft. Hood, TX
- Fort Rucker, AL
- Aviation/Ship Interm. Maint. Fac.
 - Norfolk; San Diego

Ongoing CTMA Projects

- Leak Test Technology Development
- Recent Alternatives to Chromate Processes
- Material Substitution for Composite Repairs
- Process Substitution for Composite Repairs
- Portable Thermal Spray Technologies
- Laser Shot Peening for Life Cycle Increase
- Manual ARC Welding
- Laser Engineered Net Shaping
- Rapid Prototyping Technology Advancement
- High Throughput Production Processing

Ongoing CTMA Projects

- Advanced Distributed Learning (Phase I, II)
- Automated Work Process Planning (I, II)
- Affordable High Density Chip on Board
- Rapid Response Computer Aided Mfg. (for circuit boards)
- Embedded Decoupled Capacitors
- Virtual Reality for Depot Repairs
- Electronic Collaborative Manufacturing
- Near Dry Machining of Aluminum

CTMA Project Launch Criteria

- Begins with a concept (~5 pages long)
- Joint Industry/DoD interest and needs
- Cost/Benefits summary sketched out
 - ROI
- Participant roles defined
- Support within Depot for care and custody of program deliverables
- Submission of concept to OSD
- 10 day turnaround for approval...

Elements of the Concept Paper

- Concept Paper: Title
- Statement of Problem
- Proposed Solution
- Deliverables (A final report is not sufficient. Projects should deliver a product or service to the repair facility.)
- Benefits
 - What quantifiable benefits are to be expected from this project. (we need to generate an ROI for the project)
 - What performance measurements are going to be undertaken during the project
- Anticipated Participants (DoD, Industry Partners, other government or academic facilities)
- Estimated Cost and Duration
 - Total Cost Estimate:
 - Cost Sharing Estimates include: All projects require a 2:1 industry cost-share component, which can include materials, equipment usage, staff hours, travel, background technology being given to the project, testing, and most any effort that is used to achieve the project goals.
 - Requested Contract Funding:

New Emerging Ideas

- Radio Frequency Locators
- Reliability Maintenance
- High-Reliability Lead Free Solder
- Next Generation Inspection Systems
- Thermal Spray Replacement Coatings
- Aluminum Structural/Dynamic Composites
- Equipment Parts Management System
- Ship Information Repository
- Hard Chrome Process Improvement
- Non-Destructive Inspection of Composite Parts
- Honing for Auxillary Power Units
- UV Surface Preparation
- Oxy-Fuel Cutting Alternatives
- Robotic Painting Optimization
- Kinetic Spray Processing

Getting Involved and Staying Informed

- Project Ideas
 - Submit directly to NCMS Staff
 - Respond via website or e-mail
(<http://ctma.ncms.org>)
- CTMA Website
- The CTMA Connector Newsletter
- Annual Maintenance Activities Symposium